

Appl. No. 10/552,365
Amdt. Dated January 22, 2009
Reply to Office Action of September 23, 2008

• • • R E M A R K S / A R G U M E N T S • • •

The Official Action of September 23, 2008 has been thoroughly studied. Accordingly, the following remarks are believed to be sufficient to place the application into condition for allowance.

By the present amendment applicant is resubmitting the previous amendments to the Abstract as it appears that the Examiner had not received applicant's preliminary amendment to the Abstract.

In this regard the Examiner has objected to language in the Abstract the applicant has deleted in the preliminary amendment.

Also by the present amendment claim 2 has been changed to recite a rear edge of the two front wheels is located at the rear of a front edge of the battery.

Further, claim 5 has been changed to recite two pairs of upper pivots and two pairs of lower pivots are provided on the connection parts and extend inside two other pairs of upper pivots and two other pairs of lower pivots.

Support for this limitation can be found in Fig. 2 in which the two pairs of upper pivots and two pairs of lower pivots are identified by reference numerals 121', 122', 123, and 124. and the two other pairs of upper pivots and two other pairs of lower pivots are identified by reference numerals 121, 122, 123 and 124.

Entry of the changes to the Abstract and claims is respectfully requested.

On page 2 of the Office Action the Examiner has rejected claims 2-10 under 35 U.S.C. §112, second paragraph.

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Under this rejection the Examiner indicated that the language of claims 2 and 5 was indefinite.

In response thereto, claims 2 and 5 have been amended as note and discussed above.

With regard to claim 6 the Examiner has stated that the phrase "upper/lower connection parts" is indefinite.

It is noted that 3 includes the recitation: "two protruding upper/lower connection parts that are provided at a middle of the front end of the casing."

It is believed that this recitation provides antecedent basis for claim 6 and otherwise makes the limitations of claim 6 definite.

Claims 1-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,772,237 to Finch et al. in view of U.S. Patent No. 6,851,498 to Sauve.

For the reasons set forth below it is submitted that all of the pending claims are allowable over the prior art of record and therefore, the outstanding rejection of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is earnestly solicited.

The Examiner has relied upon Finch et al. as teaching:

...an electric vehicle including: a frame/compartment (2, 2c); a seat (2b); two front wheels (3); two rear wheels (4), a driving device; a battery (see battery compartment 2c); a steering system (see col. 4, lines 7-9); and a front wheel suspension device (5, 6, 7), the frame (2, 2c) protrudes forward to form a casing at a middle portion of a front end of the frame/compartment (2c) in which casing the battery is received, the front wheel suspension device (5, 6, 7) has a front convex shape and a rear convex shape covering a front end of the casing, and is pivotally joined (at 5c, 2g, 2f) at a middle position of the front end of the casing, and the two front wheels (3) installed on the front wheel suspension device (5, 6, 7); the vehicle including two protruding

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upper/lower connection parts that are provided at a middle of the front end of the casing; two pairs of upper and lower pivot joint parts provided on the connection parts (5d); a pair of front upper cantilevers (7); a pair of front lower cantilevers (6); and a vibration damper (13), front ends of the front upper and lower cantilevers (6, 7) are connected to pivot joint parts (5) along a longitudinal axis of the electric vehicle, rear ends of the cantilevers extend towards a side rear to a side of the frame casing, the left and front cantilevers and right and front cantilevers are connected with left and right ball head pins at the rear of the cantilevers, left and right axles (see Fig. 3) are provided on the left and right ball head pins and rotationally support the left and right front wheels (3), the damper (13) is provided neat the rear of the cantilevers (6, 7), with one end of the damper (13) connected to the frame (2, 2c) and another end of the damper (13) connected to the cantilevers (7); the front cantilevers at the left and the front at the right form a trapezoid. The casing has a downward facing concave cavity in which the battery is received.

The Examiner has relied upon Sauve as teaching:

...a steering system connected to the front end of a frame and interlocked with front wheels. The steering system includes left and right lateral bars, a steering shaft and a steering handle, the steering shaft is rotationally provided at the front of the frame and interlocks with the left and right axles via the lateral bars.

In combining the teachings of Finch et al. and Sauve the Examiner takes the position that:

...it would have been obvious....to connect the steering system to the front end of the frame and to interlock it with the front wheels to facilitate movement of the left and right front wheels.

...it would have been obvious....to position the font wheels closer to the front edge of the battery to create a more compact vehicle.

...it would have been obvious....to fixedly attach the rear cantilever (at 2f) to limit vertical movement of the wheels for safety.

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Finch et al. teaches a power wheelchair which is driven by the front wheels. In Finch et al. the front suspension system is formed by three links (5, 6, 7) and a battery compartment 2c is beneath the frame 2 and located between the front suspension system and the rear suspension system.

In the front suspension system, two mounting links 6 are connected between the frame 2 of the wheel chair and a wheel mounting transaxle housing 5 and a stabilizing link 7 is connected between the frame 2 and the mounting links 6.

The present invention provides an electric vehicle that is driven by the rear wheels and has a battery that is positioned at the front of the vehicle and between the front wheels, so as to create a better balance of the front/rear weight distribution while maintaining sufficient leg room without making the vehicle excessively long.

Finch et al. fails to teach the following limitations of independent claim 1:

1) "the frame protrudes forward to form a casing at a middle position of a front end of the frame in which casing the battery is received..."

2) "the front wheel suspension device has a front convex shape and a rear concave shape covering a front end of the casing and is pivotally joined at a middle position of the front end of the casing..."

3) "the steering system is connected to the front end of the frame and interlocks with the front wheels."

The Examiner's has interpreted elements 2 and 2c of Finch et al. as being applicant's claimed frame and element 2c as being applicant's claimed battery compartment.

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Finch et al. teaches that reference numeral 2 identifies an elongated frame and reference numeral 2c identifies a battery compartment.

Based upon this teaching, the frame (2) of Finch et al. does not protrude forward to form a casing at a middle position of a front end of the frame.

Rather the battery casing 2c of Finch et al. is located in the center of the frame. Or, if one considers that Finch et al. teaches that the frame includes a forward leg rest portion 2a, the battery compartment 2c is located rearward of the middle of the frame.

Finch does not teach a front wheel suspension device that has a front convex shape and a rear concave shape covering a front end of the casing which is pivotally joined at a middle position of the front end of the casing..." In this regard the Examiner has relied upon Finch et al. as teaching a front wheel suspension device that is defined by transaxle housing 5, mounting links 6 and a stabilizing link 7. The structure defined by these elements does not have a convex shape at all (See especially Fig. 3 of Finch et al.).

Overall, Finch et al. fails to teach applicant's claimed structure and the related functionality which further distinguishes applicant's invention over the prior art, including creating a better balance of the front/rear weight distribution while maintaining sufficient leg room without making the vehicle excessively long.

The Examiner's reliance upon Sauve does not address or overcome the deficiencies noted above with respect to Finch et al.

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Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicant's claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejection of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.


If upon consideration of the above, the Examiner should feel that there remains outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicant's patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of

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time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,


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